

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/704,724

REMARKS

This Amendment, submitted in response to the Office Action dated, October 6, 2005, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Turning to the merits of the Office Action, claims 1-8 remain pending. Claims 1-4 have been rejected under 35 U.S.C. § 103 as being unpatentable over Bolash (U.S.P. 5,940,093). Claims 5-8 have been rejected under 35 U.S.C. § 103 as being unpatentable over Bolash in view of Herwald (U.S.P. 6,695,426). Applicant propose the following arguments in traversal of the prior art rejections.

With regard to the rejection over Bolash and Herwald, Applicant would request withdrawal of the rejection because Herwald does not appear to qualify as prior art under any provision of 35 U.S.C. § 102. Specifically, the present application has a filing date of November 3, 2000, which precedes both the filing date and publication dates of Herwald. Therefore, Applicant submits that Herwald does not qualify as prior art against the present application.

With regard to the primary rejection of claim 1 over Bolash, Applicant propose submitting the following arguments. Bolash discloses a “shingling printing method” which controls deliberately the feeling distance to be less than a width of the printer head for scanning a duplicated part thereof in order to provide high quality printing through reduction of white noise lines. Such problems are unique to an ink jet printer rather than a laser printer such as in present invention. Therefore, Bolash is drawn from non-analogous art since the printing mechanism of Bolash would not apply to the present invention.

Applicant's invention relates to a printing method for multiple colored inks. A typical spot arrangement for printing includes that shown in Fig. 21, for example, with spots 1-15 arranged in a main scan and a sub-scan direction. Due to heating effects in the thermal head, the edge-located spots (e.g. 1, 15 or 1, 6, and 11) may form thinner lines or produce less color than those spots which are not located at the boundary areas of the printing head. See Figs. 23 and 24. When multiple colors become printed by the spot, these thin lines or less color-developed areas become highly pronounced.

Applicant's invention overcomes the above deficiencies. Referring to Fig. 3, for example, the spot for recording different colors become offset to produce an image that does not include images with emphasized thin line portions or areas of less color production. In Fig. 3, the dark portions represent color formation of one color, which spots are formed offset from the lighter color portion of a second color.

Turning to the cited art, Bolash relates to a printing method to compensate for physical errors in transporting a medium to be recorded. In this regard, Bolash discloses a shingling method where partial images are formed during a scan, and multiple scans form the full image. Referring to Fig. 2, a print head including Y, M, C colored inks are arranged vertically, separated by a predetermined distance. Due to shingling, the Y, M, C print head is placed at multiple locations (e.g. first, second and third scan positions) to produce a complete image over multiple scans. Between each scan, an adjustment D is made to compensate for physical alignment errors in the medium transport device. This redistributes harmonic errors due to the transport device. When carrying out a 50% shingling method, a color cartridge 10 including each of the Y, M, C inks becomes scanned to selectively deposit each of the Y, M, C inks in the first scan. After the

first scan, the medium becomes advanced to a next position which includes the adjustment D and a second scan of each of the Y, M, C inks occurs. Col. 5, lines 7-37.

The Examiner contends that Bolash teaches or suggests each feature of independent claim 1. The Examiner suggests that Bolash teaches simultaneous paper and print head adjustment to overcome harmonic error. The Examiner further reasons that because the adjustment of the paper moving device can correspond to any distance A or larger, and since a spot can be any particular size, that Bolash performs offsetting by at least one spot. Applicant propose that the rejection is not supported for the following reason.

Claim 1 describe offsetting of recording of at least one color of two colors in a sub scan direction. To the extent that Bolash includes an adjustment relative to a spot distance A, that adjustment affects all the colors Y, M, C disposed on a print head 10 in equal measure. In Bolash, after Y, M, C is provided for a first scan, a displacement relative to spot distance A would offset Y, M, C in equal degree, and therefore there is no offset between a record position for one of two colors. Therefore, Applicant submits that there is no offset of one color relative to another color since the positioning adjustment is equally applied for each color disposed on the print head. Therefore, because the colors are not offset relative to each other, Applicant submits that the apparatus of Bolash would likely include the non-uniform line and color formation deficiencies of the prior art. By contrast, the invention of claim 1 is able to mitigate such occurrences.

Because claim 2 includes features regarding the color offset similar to claim 1, claim 2 is also patentable over Bolash for the reasons set forth above for claim 1. Claims 3-4 are patentable based on their dependency.

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With further regard to claim 3, this claim describes offsets of first, second and third spots for respective colors. The Examiner has not indicated how this feature is taught in Bolash. To the extent different offsets relative to distance A may be provided in Bolash, these offsets need not include the offset by spot and color as described by claim 3. Therefore, claim 3 is patentable for this additional reason.

Claim 11 is added to describe the invention more particularly.

In view of the above, Applicant submits that claims 1-11 are in condition for allowance. Therefore, it is respectfully requested that the subject application be passed to issue at the earliest possible time. The Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

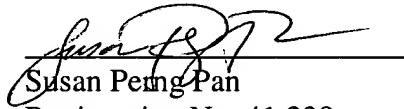
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